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PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in and relating to Spring Bases or Insertions for Mattresses, Cushions, Upholstered Furniture or the like.

We, SCHLAFAPFIA-WERKE HÜSER & Co., G.M.B.H., of Kreuzstrasse 29—31, Wuppertal-Barmen, Germany, a German Company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention relates to a spring base or spring insertion, for mattresses, cushions, upholstered furniture or the like, consisting of a number of upright helical springs arranged beside one another the coils of which are connected with the coils of the adjoining springs either directly or with the aid of separate intermediate members, and of which the ends are wound spirally.

The novelty consists essentially in that the spiral ends of the individual springs have the shape of a truncated cone and their pitch is considerably less than the pitch of the main coils of the springs lying between the ends. With this special construction, the spiral ends are given a preliminary strain which ensures that, when the spring insertion is subjected to load, all the turns of the spiral ends are supported on the covering of the spring insertion and the latter is uniformly supported over a greater area than hitherto.

The connection and mutual support of the individual springs of the base can advantageously be effected, in accordance with the invention, by means of eyes which are provided on the turns of the springs and are formed by loops in the wire and are hooked together with the eyes of the adjacent springs in the manner of puzzle loops. The eyes may be advantageously arranged on the main turns lying nearest to the conical ends of the spring and preferably inside the circle formed by the main coil so that the main coils of the springs which are connected together overlap. A reliable connection and mutual support of the individual springs of the base is thereby obtained in a simple manner and the springs are also held apart with certainty.

A constructional embodiment of the invention is illustrated by way of example [Price 1/-]

in the accompanying drawings, in which Fig. 1 shows a spring base with its covering partly in section and partly in elevation,

Fig. 2 shows two interconnected springs of the base in elevation and on a larger scale, while

Fig. 3 shows one of the connection places of the two springs of Fig. 2 in plan.

Referring to the drawings, the spring base or insertion, as may be seen in particular from Figs. 1 and 2, is formed of upright cylindrical helical springs *f* which are arranged one beside another and interconnected. Each of the springs *f* is provided at the top and bottom with conical tapering end portions *g* and *d* respectively which are wound from a single wire with the main portion of the spring. Whereas the coils *f* are wound with a relatively large pitch, the pitch of the turns of the conical ends *d* and *g* is considerably smaller.

The interconnected springs are enclosed in Fig. 1 by upholstery *b* by which the conical ends *d* and *g* are already compressed to such an extent that some of their turns no longer lie one above another but lie beside one another that is to say in a plane. In order to retain the shape of the periphery of the mattress the springs *f* are fitted between two frames *a* formed by flat bars.

At the transition places of the middle cylindrical portion of each spring into its conical end portion there are arranged eyes which are formed by small circular loops *h* in the wire of the spring. The individual adjacent upright springs *f* of the insertion are hooked together by these loops *h* in the same way as puzzle loops, whereby all the springs of the base or insertion are combined to form a unitary wire fabric. Further the loops *h* are directed towards the centre of the spring, as may be seen from Fig. 3, so that they lie inside the external periphery of the cylindrical portion of the spring. The result is thereby obtained that the cylindrical portions of the individual interconnected springs of the insertion or base engage in one another so that

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when subject to load their turns f are supported one on another.

The connecting eyes formed by loops of this nature also have the advantage, as compared with hooks, that they possess no free ends and do not therefore hook themselves into the covering b of the base when the load varies; they cannot therefore tear the covering.

10 When a spring base or insertion of this nature is subjected to load the conical ends d and g of the springs f are in the first place further compressed so that all the turns come to lie in a plane and are 15 in this way caused to form true spiral springs. By this means the supporting surface of the covering b on the cylindrical middle portion f of the springs which take the main load is considerably 20 increased, and the covering is thus better protected without the soft springing of the base itself being impaired thereby. Owing to the small pitch of the end portions d and g the result is obtained that 25 when there is a load on the base all their turns are in firm contact with the covering b .

The end turns of the conical portions d and g are so wound that they form a closed circle and their free ends come to 30 lie under the point where the end coil starts, in order to prevent the ends piercing the covering and thus to prevent damage to the latter with certainty. In 35 some cases, for the same purpose, the free ends of the conical end portions can be bent inwardly towards the middle of the spring.

The invention is not of course limited 40 to the example illustrated but other forms of construction are possible. Thus for example the connection of the individual springs could also be effected by

separate members for example with the aid of screws inserted through the eyes, hollow rivets or the like. Also the middle 45 portion of the springs with the large pitch need not be cylindrically wound.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to 50 be performed, we declare that what we claim is:—

1. Spring base or insertion for mattresses, cushions, upholstered furniture or the like consisting of upright 55 interconnected helical springs which are arranged one beside another and of which the ends are spirally wound characterised by the feature that the spiral ends of the springs are wound with a smaller 60 pitch than the middle portion of the spring between them.

2. Spring base or insertion in accordance with claim 1, characterised by the feature that the individual adjoining 65 springs of the base are hooked together by loops on a portion of the wire lying outside the spiral ends.

3. Spring base or insertion in accordance with claim 2, characterised by the feature that the loops are arranged on the end turns of the middle portion of the 70 springs and lie inside the outer cylindrical periphery of the springs.

4. Spring base or insertion for mattresses, cushions or the like, substantially as described with reference to the 75 accompanying drawings.

Dated this 18th day of July, 1932.

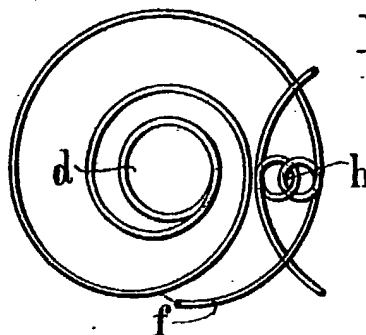
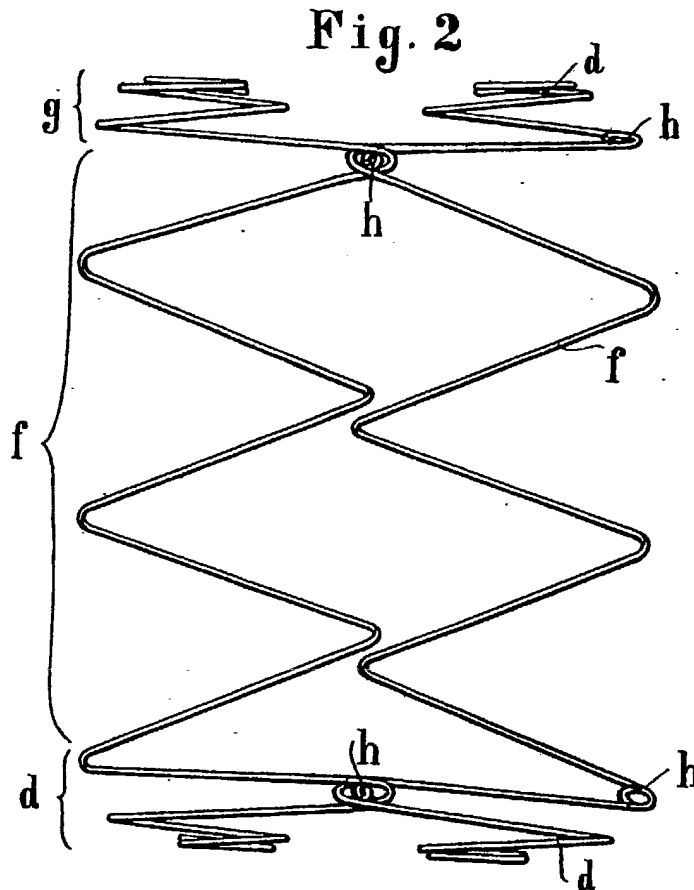
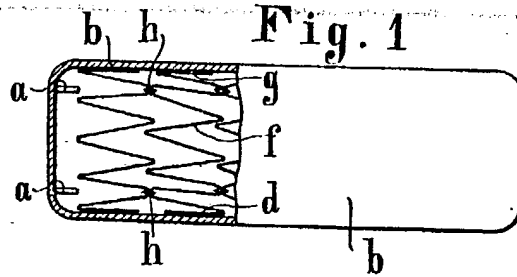
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